

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/055200 A1

(51) International Patent Classification⁷: G10L 17/00, 15/06

(21) International Application Number:

PCT/AU2004/001718

(22) International Filing Date: 3 December 2004 (03.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003906741 5 December 2003 (05.12.2003) AU

(71) Applicant (for all designated States except US): QUEENSLAND UNIVERSITY OF TECHNOLOGY [AU/AU]; 2 George Street, Brisbane, QLD 4000 (AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): PELECANOS, Jason [AU/US]; 81 Charter Circle, Apt 1E, Ossining, NY 10562 (US). VOGT, Robert [AU/AU]; 5/70 Ekibin Road, Annerley, QLD 4103 (AU). SRIDHARAN, Subramanian [AU/AU]; 6 Chatburn Street, Chapel Hill, QLD 4069 (AU).

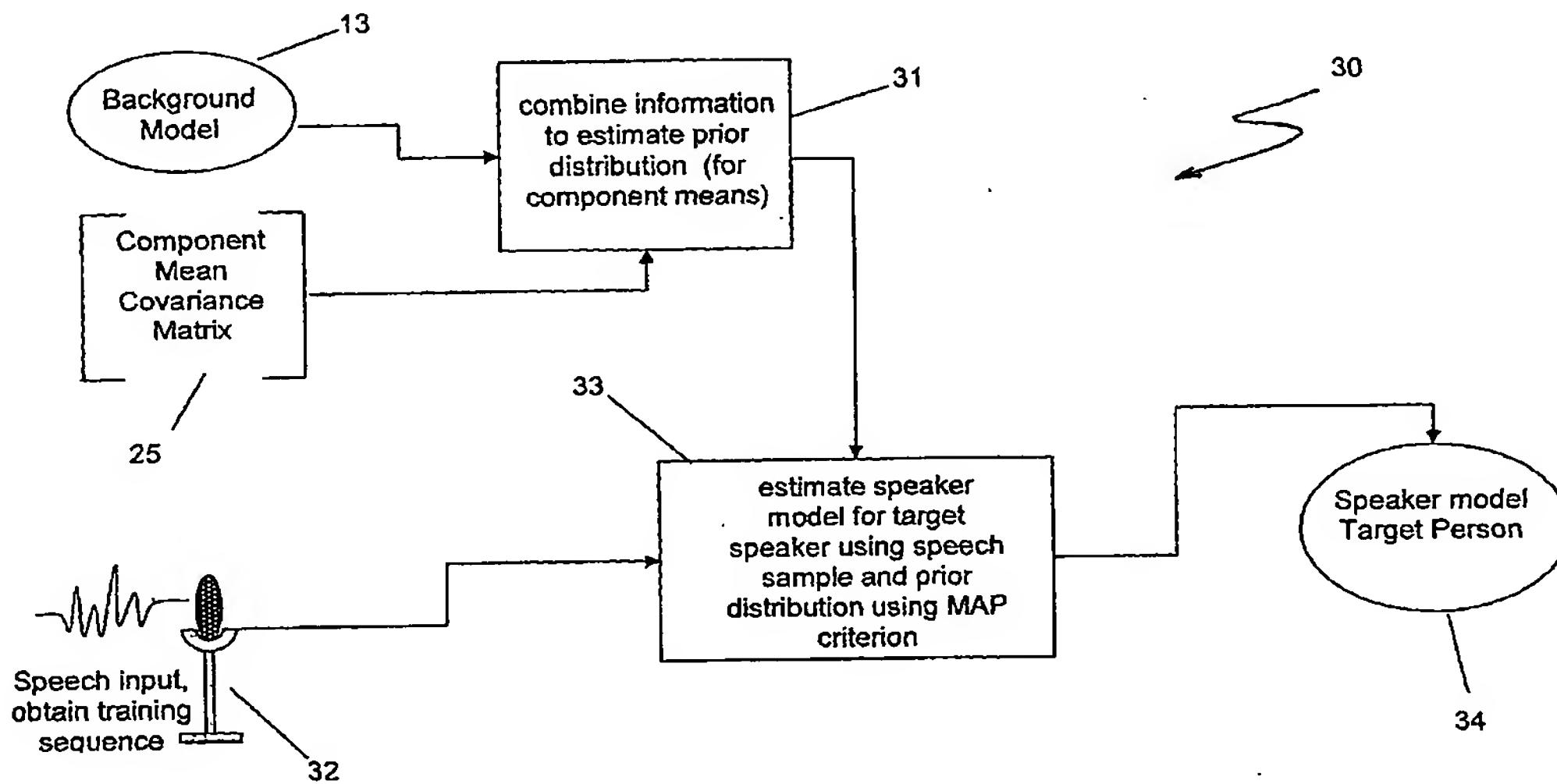
(74) Agent: PIZZEYS PATENT AND TRADE MARK ATTORNEYS; Level 14, 324 Queen Street, Brisbane, QLD 4000 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: MODEL ADAPTATION SYSTEM AND METHOD FOR SPEAKER RECOGNITION



WO 2005/055200 A1

(57) Abstract: A system and method for speaker recognition speaker modelling whereby prior speaker information is incorporated into the modelling process, utilising the maximum a posteriori (MAP) algorithm and extending it to contain prior Gaussian component correlation information. Firstly a background model (10) is estimated. Pooled acoustic reference data (11) relating to a specific demographic of speakers (population of interest) from a given total population is then trained via the Expectation Maximization (EM) algorithm (12) to produce a background model (13). The background model (13) is adapted utilising information from a plurality of reference speakers (21) in accordance with the Maximum A Posteriori (MAP) criterion (22). Utilizing MAP estimation technique, the reference speaker data and prior information obtained from the background model parameters are combined to produce a library of adapted speaker models, namely Gaussian Mixture Models (23).



Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.